

REMARKS

Claims 1-32 were pending in the present application. Claims 16 and 32 have been cancelled. Claims 1-15 and 17-31 have been amended. Accordingly, claims 1-15 and 17-31 are now pending in the application.

Claims 4-5 and 20-21 are objected to as being substantial duplicates of claims 1 and 17, respectively. As shown above, Applicant has amended the claims and believes the amendments should overcome the objection.

Claims 2-3, 6, 18-19, and 22 stand rejected under 35 U.S.C. §112, 1st paragraph, as failing to comply with the enablement requirement. Although Applicant traverses at least portions of this rejection, as shown above, Applicant has amended the claims and believes the amendments should overcome the rejection. However, the Examiner has made additional comments throughout the Office action regarding a perceived lack of support in the specification for claim language directed to how/whether a given coherency unit is mapped or not mapped. Applicant respectfully disagrees with the Examiner's allegations. Specifically, Applicant directs the Examiner to read at least paragraphs [0179] through [0181] and [0228], among others, in the specification as filed. These paragraphs clearly describe embodiments regarding how and why a coherency unit is mapped or not mapped, and the decision making process to use broadcast mode or point-to-point mode.

Claims 1, 2, 4-8, 11, 12, 14, 17, 18, 20-24, 27, 28, and 30 stand rejected under 35 U.S.C. §112, 2nd paragraph, as being indefinite. Specifically, the Examiner has pointed out various antecedent problems with the claims. Applicant has amended the claims and believes the amendments should overcome the rejection.

Claims 1, 2, 4-6, 10, 15-18, 20-22, 26, 31, and 32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hagersten et al. (U.S. Patent No. 5,864,671) (hereinafter "Hagersten"). Applicant respectfully traverses this rejection.

More particularly, the Examiner acknowledges Hagertsen **does not teach** the address network in one node using the broadcast protocol and another address network in another node using the point-to-point mode. However, the Examiner asserts that based upon teachings in Hagertsten that nodes may be configured differently (e.g., number of processors, memory, etc.) and that there are advantages and disadvantages of each conveyance mode (BC or PTP), it would be obvious to configure some nodes to convey in BC mode and other nodes to convey in PTP mode. Applicant respectfully disagrees with the Examiner's assertion of obviousness. The Examiner has not established a *prima facie* case of obviousness in the present rejection. Specifically, it is not enough to state that something is obvious. The Examiner must show that there is some motivation to combine one or more references. The Examiner points to the Applicant's background section as prior art. However, Applicant's paragraph [0010] discloses

“Thus, while the choice of whether to implement a shared memory multiprocessing system using a broadcast snooping protocol or a directory based protocol may be clear based upon certain assumptions regarding network traffic and bandwidth, these assumptions can often change based upon the utilization of the machine. This is particularly true in scalable systems in which the overall numbers of processors connected to the network can vary significantly depending upon the configuration.”

Thus, there is a problem with the systems disclosed by Applicant in the background section, the solution to which is not taught or suggested in Hagersten or in Applicant's background section. Furthermore, as mentioned above, Applicant has amended claim 1, which now recites

“a plurality of nodes, wherein each node of the plurality of nodes includes
a plurality of active devices and an address network that is
configured to couple the plurality of active devices together; and
an inter-node network coupled to the address network and configured to
convey communications between the plurality of nodes;
wherein each address network is independently configured to convey
address packets specifying a coherency unit using a broadcast
mode and a point-to-point mode; and

wherein each address network is further configured to independently select one of the broadcast mode and the point-to-point mode dependent upon whether the coherency unit maps to any of the active devices of the plurality of active devices included in the node."

With the amendments made to claim 1, Applicant submits there is no such teaching or suggestion in Hagersten or Applicant's background section of the specification.

Accordingly, Applicant respectfully submits that claim 1, along with its dependent claims, patentably distinguishes over Hagersten for the reasons given above. In addition, Applicant's claim 17 recites features that are similar to the features recited in claim 1. Thus, for at least the reasons given above, Applicant submits claim 17, along with its dependent claims, patentably distinguishes over Hagersten.

Claims 3, 14, 19, and 30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hagersten in view of Hagersten et al. (U.S. Patent No. 5,887,138) (hereinafter "Hagersten #2"). Applicant respectfully traverses this rejection. Specifically, for at least the reasons given above, Applicant submits claims 3, 14, 19, and 30 patentably distinguish over Hagersten and over Hagersten #2.

Claims 1, 2, 4-6, 15-18, 20-22, 26, 31, and 32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hagersten in view of Martin et al. (U.S. Patent No. 6,883,070) (hereinafter "Martin"). Applicant respectfully traverses this rejection.

More particularly, the Examiner acknowledges that Hagersten does not teach address network in one node using the broadcast protocol and another address network in another node using the point-to-point mode. However, the Examiner asserts Martin teaches a system with varying loads that changes protocol from point-to-point to broadcast, and vice versa. Applicant notes that Martin is directed to a system that

switches between a snooping protocol and a directory protocol depending upon system network activity. (See Martin: Abstract) Applicant has amended claims 1 and 17 as described above. In addition, Martin teaches at col. 6, lines 17-31

“Referring now to FIG. 4 in the present invention, the cache controller 26 implements a state machine 29 that may execute either a snooping mechanism 30 or a directory mechanism 32. This state machine 29 provides for a switch 34 whose state selects between these mechanisms for the transmission of a given cache coherence message over the ordered request network 28.

Generally, the state of the switch 34 is determined by monitoring the message traffic on the ordered request network 28. Specifically, the cache controller 26 receives a network usage signal 36 having a high state indicating that the ordered request network 28 is receiving or transmitting messages related to the cache memory 22 and a low state indicating that the ordered request network 28 is idle with respect to cache memory 22.”

From the foregoing, Applicant submits Martin teaches the network 28 sends a usage signal to each cache controller of each processing unit. As such, Applicant submits all nodes either transmit in broadcast or point-to-point based upon this same signal. Thus, Applicant can find no reference to each node independently selecting the mode, and where one node can be using one mode and another node using a different mode. In addition, Applicant can find no reference in Martin to selecting the mode based upon whether the coherence unit is mapped to the local node memory.

Thus, Applicant further notes Martin **does not teach or disclose** “wherein each address network is independently configured to convey address packets specifying a coherency unit using a broadcast mode and a point-to-point mode” or “wherein each address network is further configured to **independently select** one of the broadcast mode and the point-to-point mode dependent upon whether the coherency unit maps to any of the active devices of the plurality of active devices included in the node,” as recited in Applicant’s claims 1 and 17.

Accordingly, Applicant respectfully submits that claim 1, along with its dependent claims, patentably distinguishes over Hagersten in view of Martin for the

reasons given above. In addition, Applicant's claim 17 recites features that are similar to the features recited in claim 1. Thus, for at least the reasons given above, Applicant submits claim 17, along with its dependent claims, patentably distinguishes over Hagersten in view of Martin.


Claims 7-9 and 23-25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hagersten in view of Martin, and in further view of Hagersten Hagersten #2. Applicant respectfully traverses this rejection for at least the reasons given above.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5181-99301/BNK.

Respectfully submitted,



Stephen J. Curran
Reg. No. 50,664
AGENT FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 853-8800

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